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United States Patent [19]

Peters et al.

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[45] **Date of Patent: May 31, 1994**

[54] **PROTECTIVE SHEATH**

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[21] Appl. No.: **954,746**

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[51] **Int. Cl.**[5] **A42C 5/00**

[52] **U.S. Cl.** **2/181.4**; 2/195.4; 2/209.13

[58] **Field of Search** ..... 2/171, 171.4, 171.5, 2/171.7, 171.8, 181, 181.2, 181.4, 181.6, 183, 195, 196, 197, 199, 209.1, 417, 418, 422, DIG. 11; 224/171, 173; 40/329, 586

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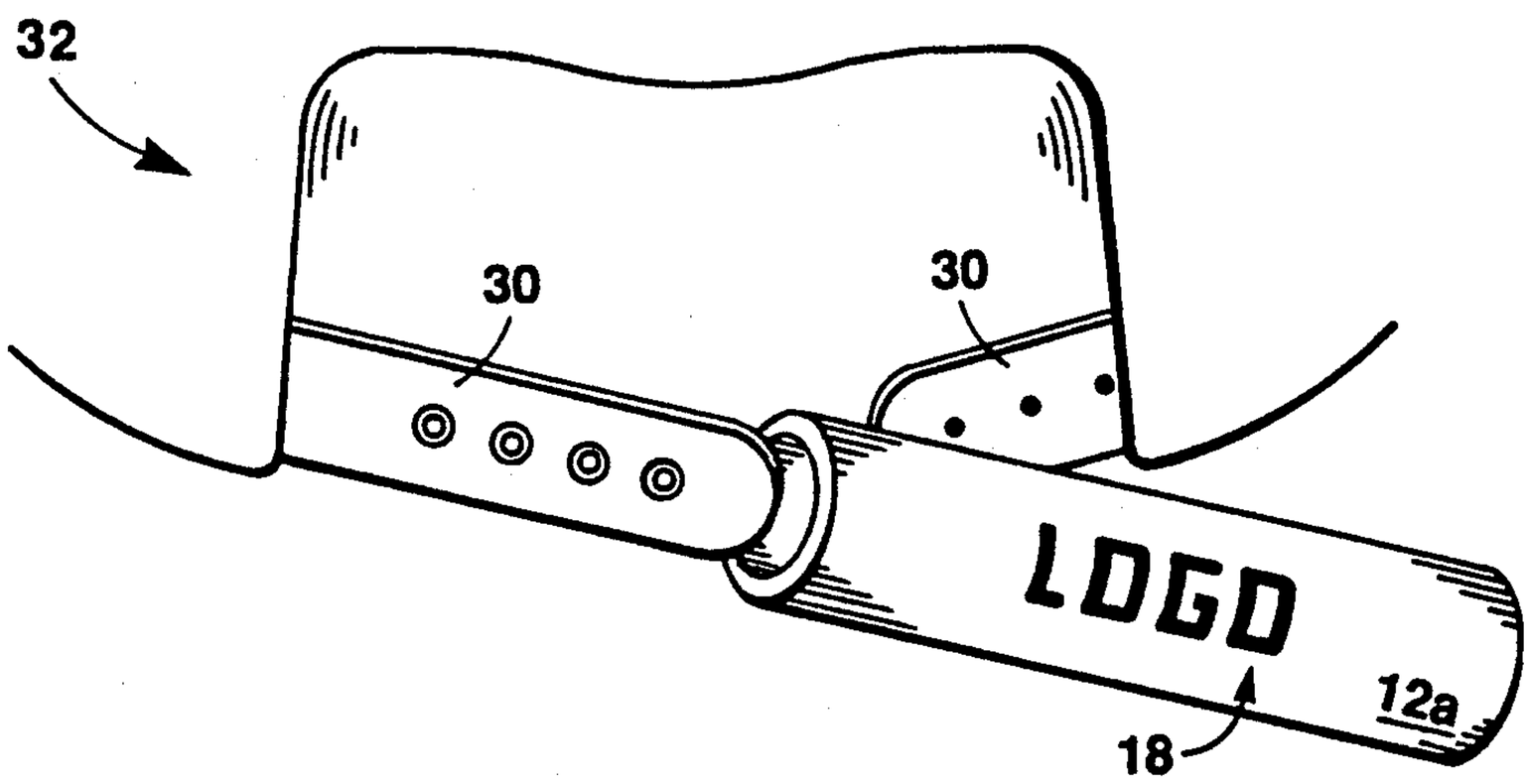
Primary Examiner—Clifford D. Crowder
Assistant Examiner—Diana L. Befeld
Attorney, Agent, or Firm—Weingarten, Schurgin, Gagnebin & Hayes

[57] **ABSTRACT**

A method and apparatus for covering and protecting engagement regions of interconnecting straps employed with apparel. In one embodiment, the apparatus includes a sheath of material which is generally tubular in shape having a inner wall and an outer wall, wherein the inner wall of the tube defines a cavity therein. The sheath is sized to permit disposition of the sheath over at least a portion of interconnecting straps employed in conjunction with certain apparel. The sheath has a predetermined length which is selected to permit the sheath to cover at least a portion of engagement regions of the respective interconnecting straps when disposed thereon.

7 Claims, 4 Drawing Sheets



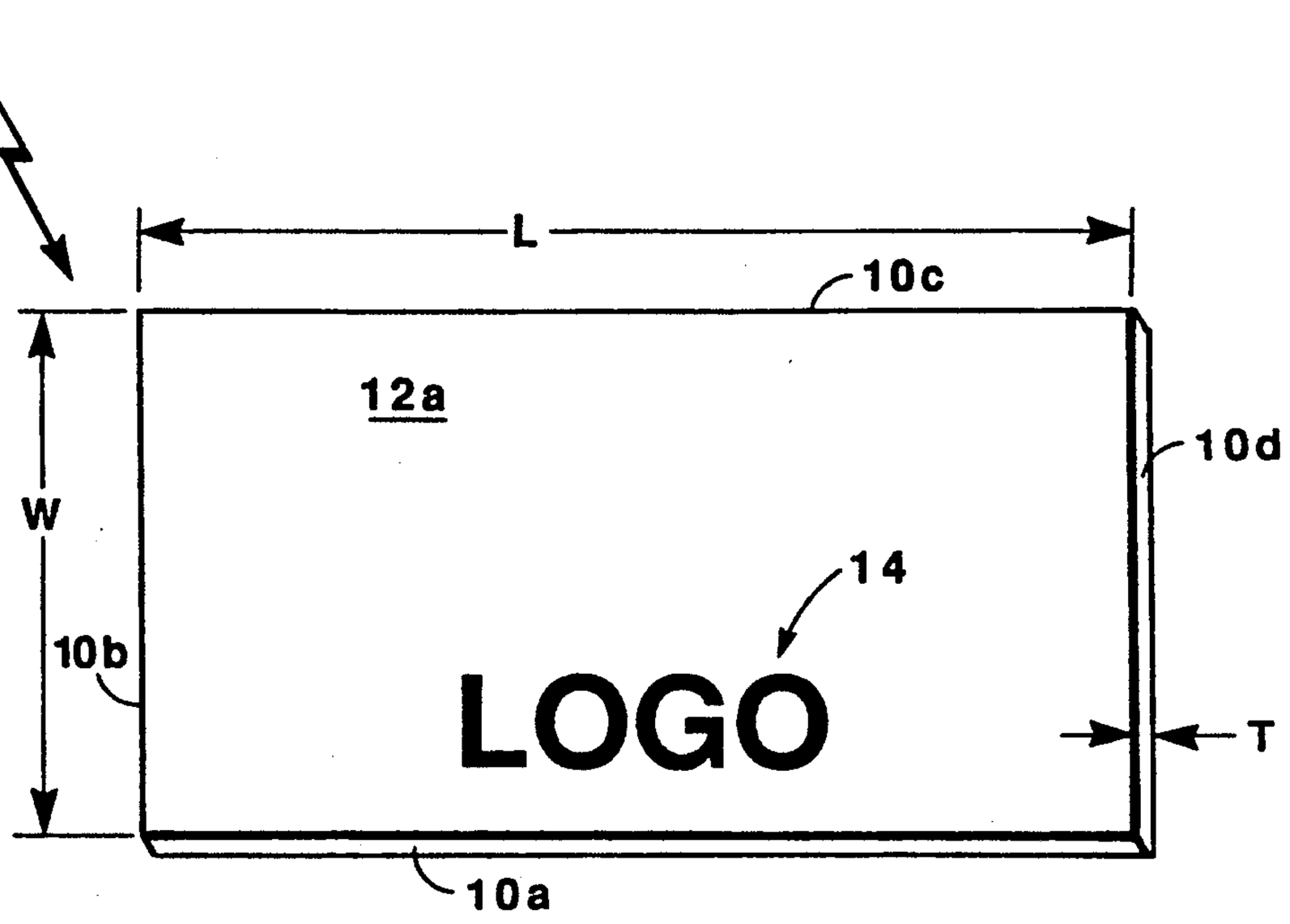


FIG. 1

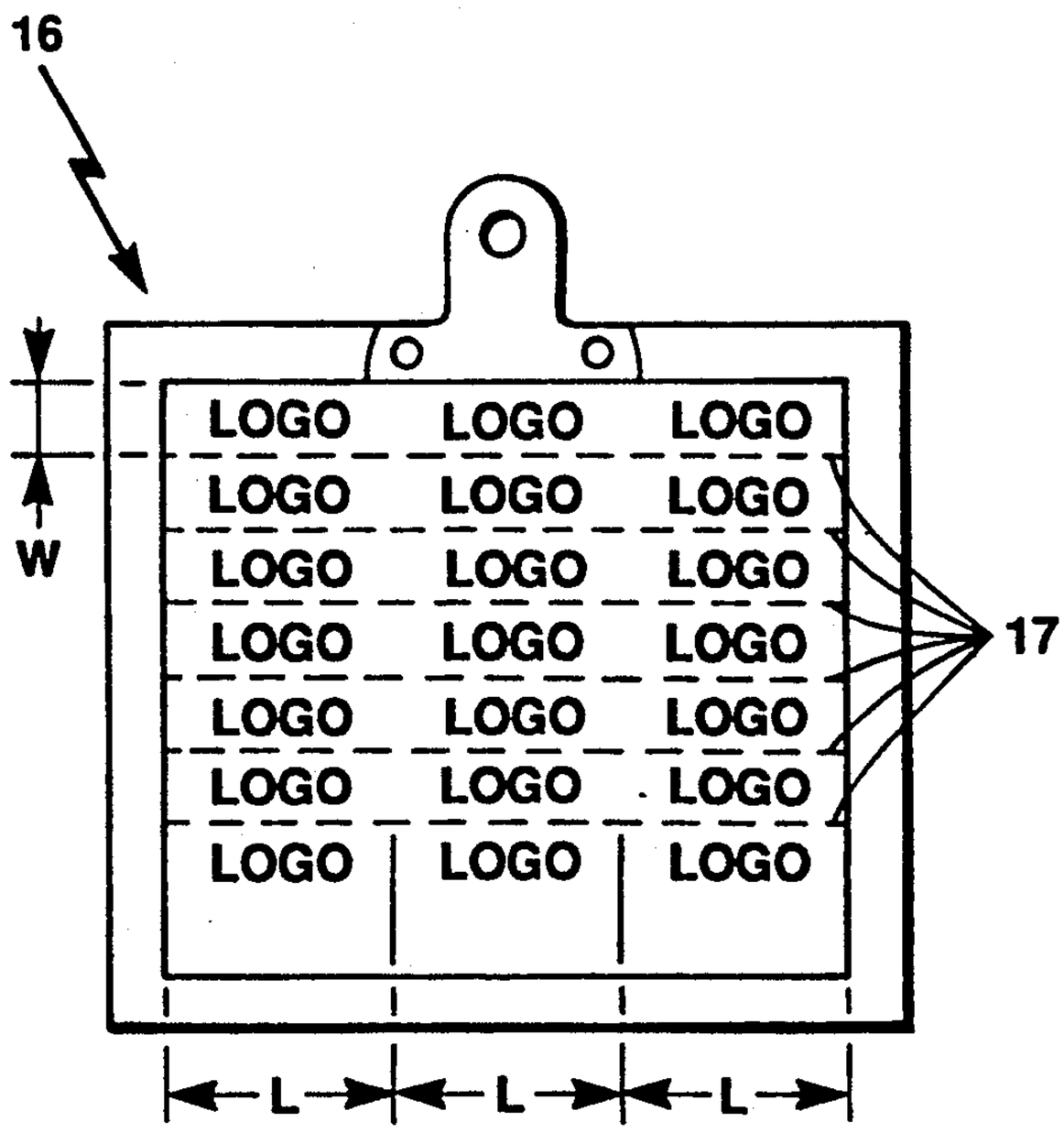


FIG. 1A

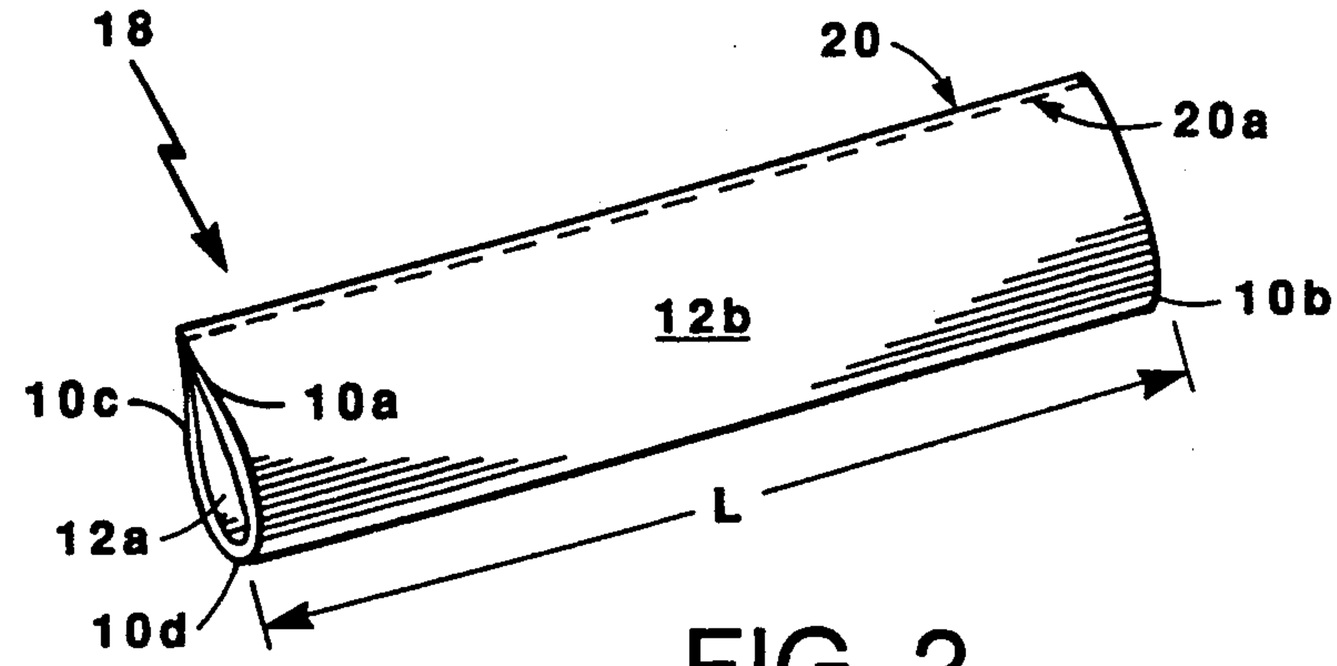


FIG. 2

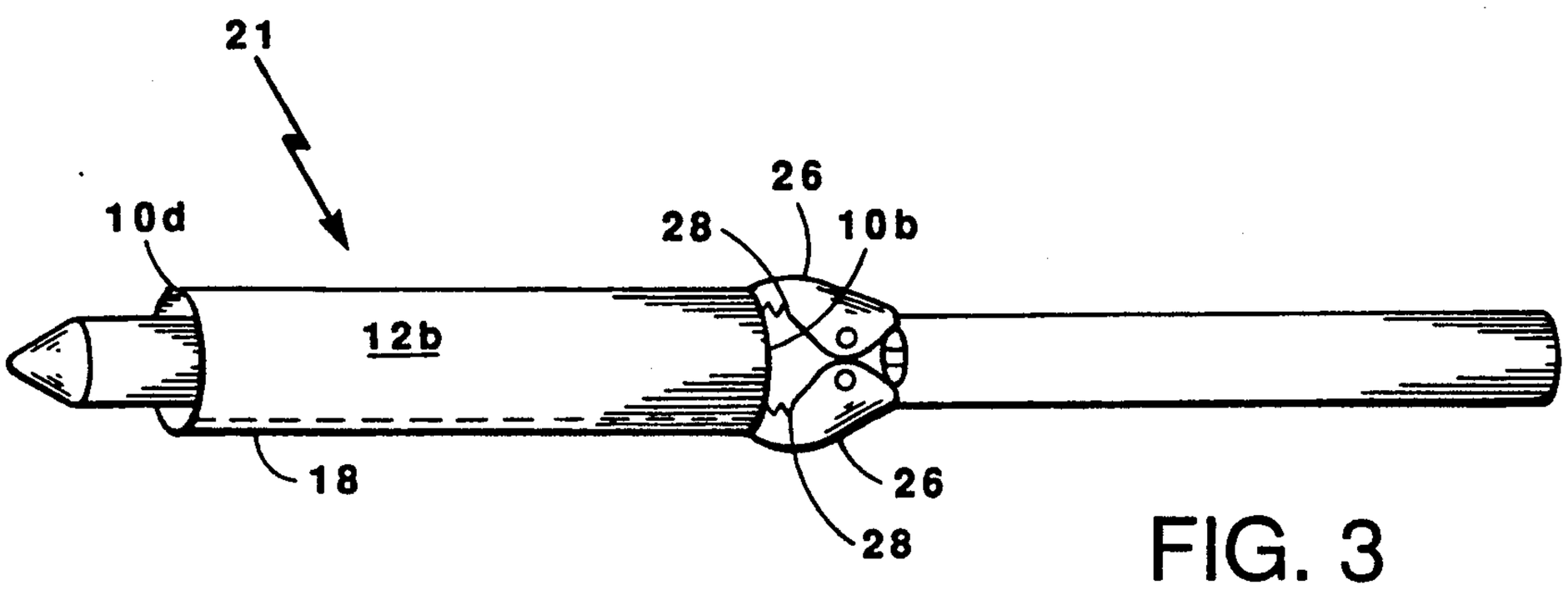


FIG. 3

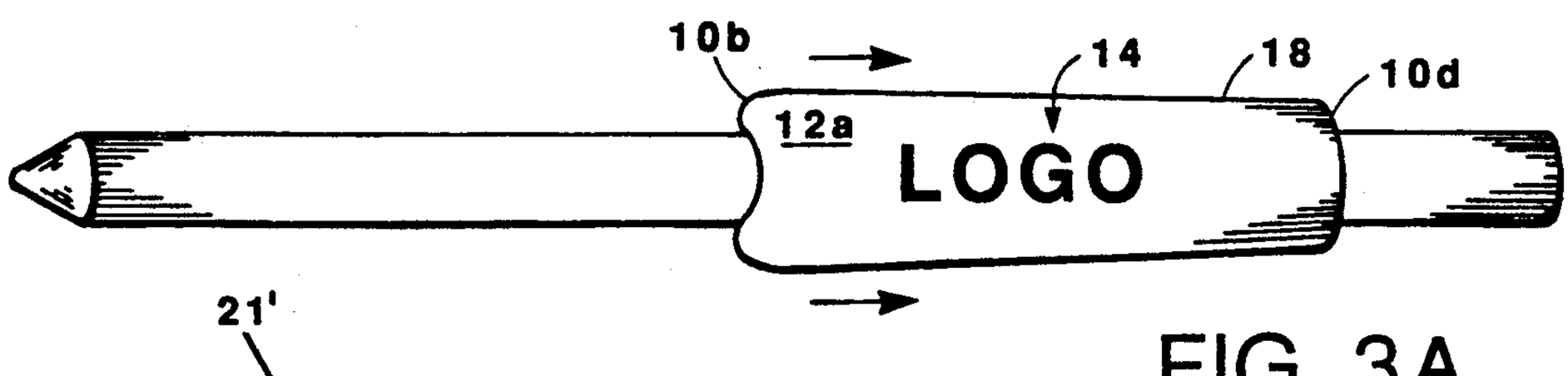


FIG. 3A

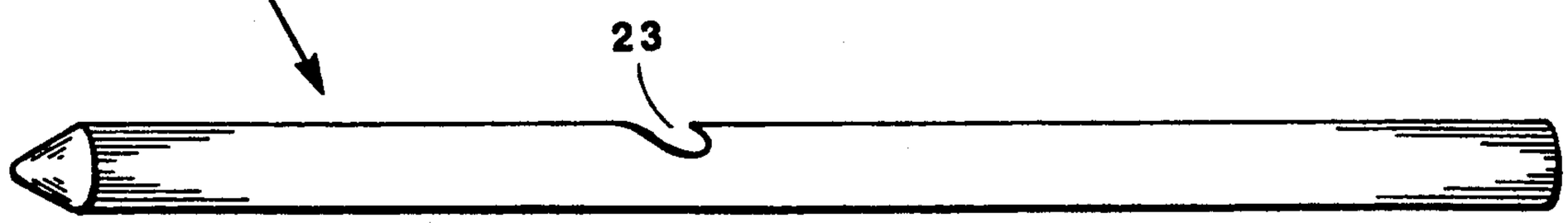


FIG. 3B

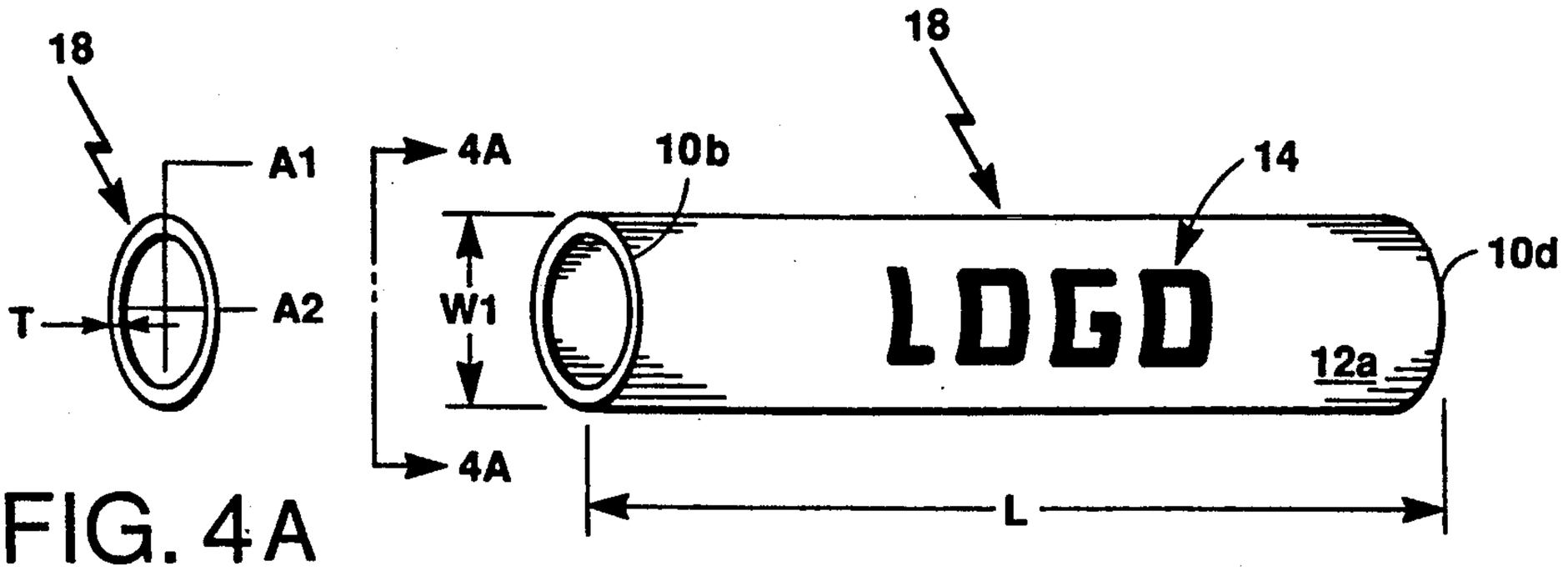


FIG. 4A

FIG. 4

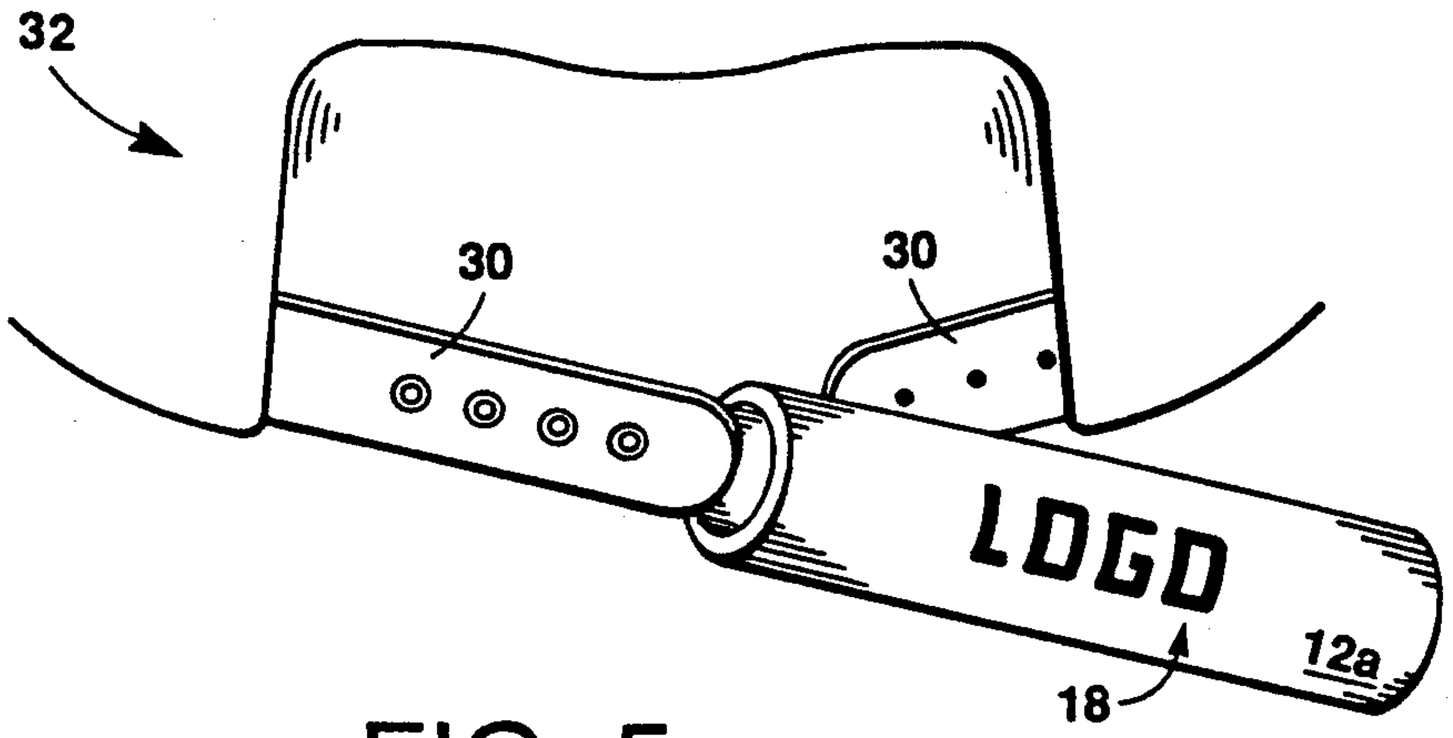


FIG. 5

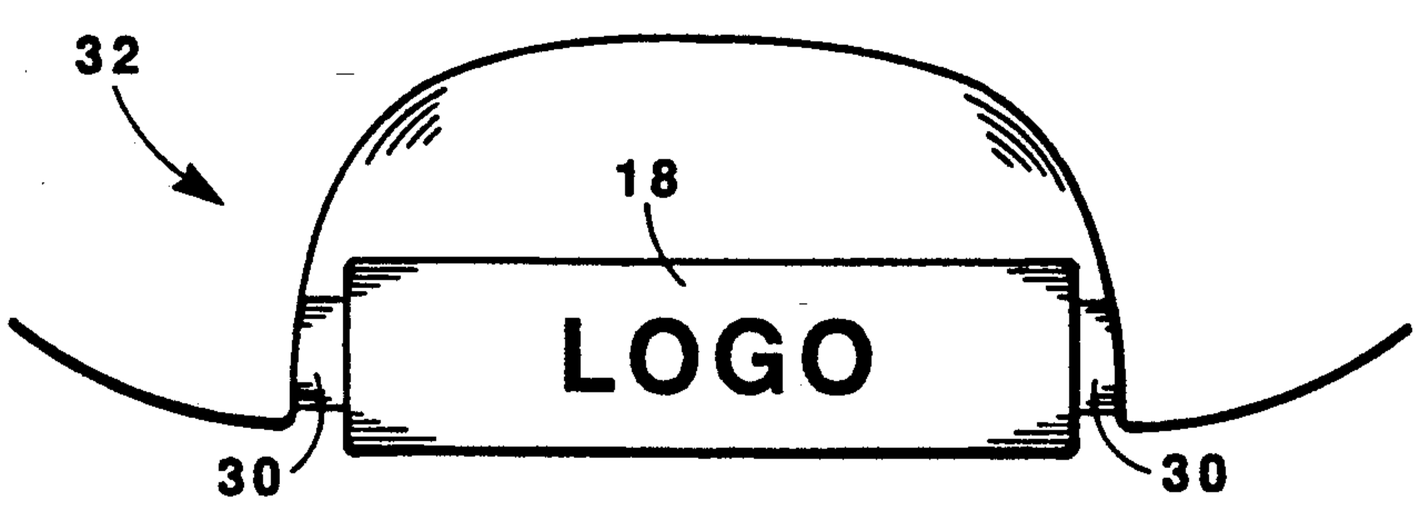


FIG. 5A

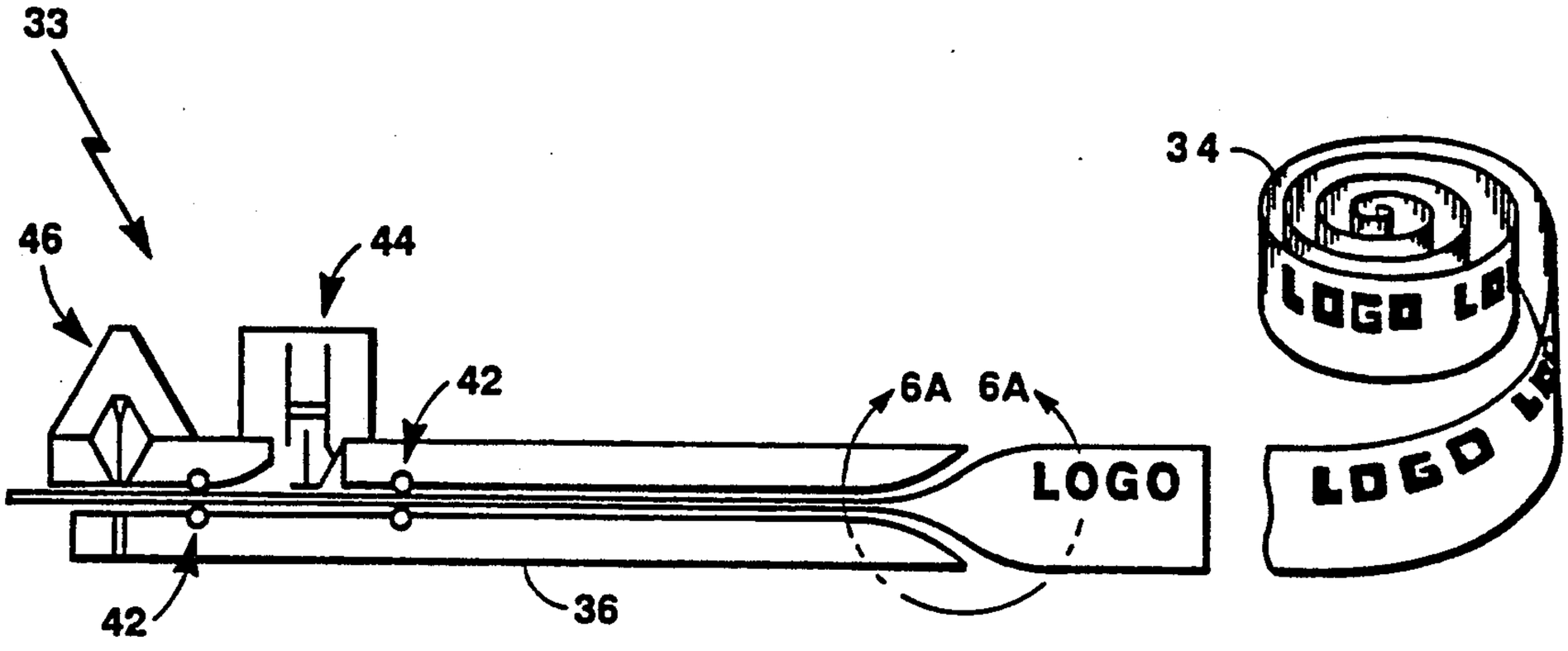

33
46
44
42
42
36
6A 6A
LOGO
34
LOGO LO
LOGO LO

FIG. 6

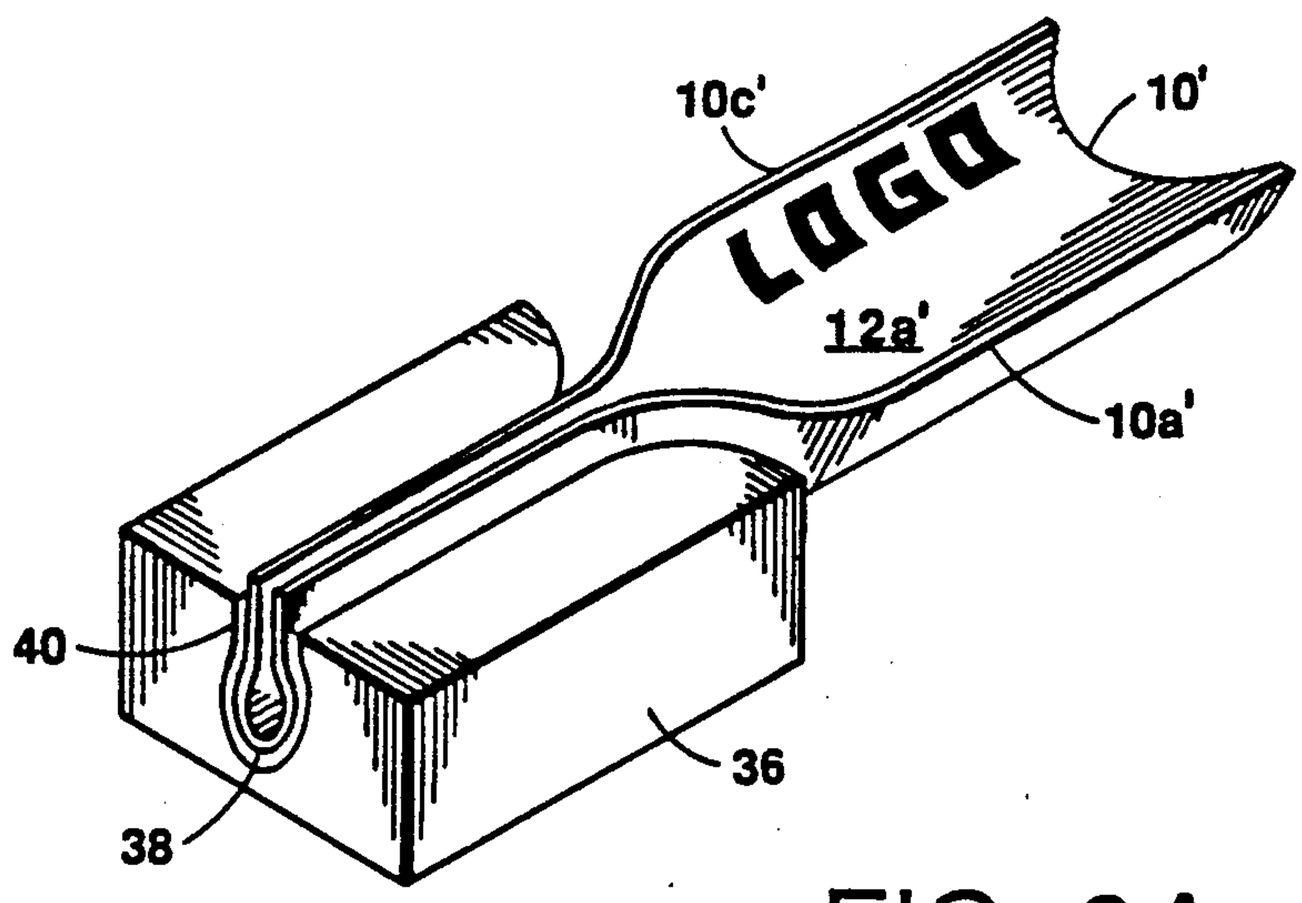

10c'
10'
LOGO
12a'
10a'
40
36
38

FIG. 6A

PROTECTIVE SHEATH

BACKGROUND OF THE INVENTION

This invention relates to protective covers or sheaths and more particularly to protective sheaths for interconnecting straps employed on apparel.

As is known in the art, clothing and other apparel often include straps used to fasten one portion of the apparel to another portion or to an external item. For example, wrist watch straps fasten or wristwatch to the wrist of a wearer, a belt disposed around a wearer's waist has first and second ends coupled to each other. Similarly, straps provided on a baseball cap afford variability in hat size to accommodate a specific individual. The interconnection straps employed with baseball caps, for example, are typically made of plastic and have cooperating bosses on the engagement portions thereof to permit the respective straps to be disengageably fastened to one another for the purpose of sizing the cap to accommodate a specific wearer. Such straps and the engagement regions thereof, can contact the user and may cause abrasion and discomfort. Additionally such straps may become inadvertently detached due to the fact the engagement portions of the respective straps are exposed permitting one of the straps to be caught so as to pull the cooperative engagement regions of the respective straps apart. Furthermore, such straps also fail to provide an aesthetically pleasing appearance.

SUMMARY OF THE INVENTION

In accordance with the present invention a protective sheath is disclosed. The sheath is generally tubular, has a predetermined length and is preferably fabricated from a soft compressive and deformable material. The tubular sheath has an inner surface which defines a cavity with the sheath. The sheath is dimensioned to allow the sheath to be disposed over at least the engagement portions of the interconnecting straps and thereby cover at least the portion of the straps which is most likely to be abrasive and to cause discomfort to a user. The thickness of the sheath is selected to provide desired comfort to a user. The length of the sheath is selected such that when the sheath is disposed over the interconnecting straps, the sheath covers at least a portion of an interconnecting region between the interconnecting straps. Preferably, the sheath covers the majority of the interconnecting straps which would otherwise be visible. By disposing the sheath over the interconnecting straps, the sheath provides an aesthetically pleasing cover which is softer, more comfortable than the strap about which the sheath is disposed. Moreover, by disposing the sheath over the engagement portions of the respective interconnection straps the sheath assists in avoiding the inadvertent disengagement of the interconnecting straps.

The sheath may be molded or formed into a predetermined generally tubular shape using typical injection molding techniques, extrusion techniques or any other manufacturing techniques known in the art.

In accordance with a further aspect of the present invention, a method of forming the sheath is disclosed which includes the steps of folding and fastening together opposing edges of a sheet of material to provide a tubular shaped sheath defining a cavity having a predetermined length and interior dimensions and having a first internal surface and a second external surface. The method further includes the step of inverting the tubular

shaped sheath such that the first internal surface of the sheath becomes an external surface of the sheath and the second external surface becomes an internal surface of the sheath. With this particular method, a tubular shaped sheath of predetermined dimensions is produced which may be slidably disposed over at least the engagement regions of an interconnecting strap. An emblem, a plurality of alpha-numeric characters or any desirable indicia may be provided on the surface of the sheet of material which is visible when disposed over the interconnecting straps. The sheet of material used to produce the sheath may be cut or otherwise provided from a larger sheet of material having a plurality of emblems or indicia provided on a surface intended to be the visible surface of the sheath. Alternatively, the indicia may be applied to the material after cutting of the larger sheet into pieces employed to make the individual sheaths.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be more fully understood from the following detailed description in conjunction with the drawings, of which:

FIGS. **1** and **1A** is a sheet of material from which a sheath may be fabricated;

FIG. **2** is a sheath formed from the sheet of FIG. **1**;

FIGS. **3** and **3A** are diagrammatical views of an exemplary inverting device for inverting the sheath;

FIG. **3B** is a diagrammatical view of an alternate embodiment of a device for inverting the sheath;

FIGS. **4** and **4A** are sheaths having letter characters disposed on a first surface thereon;

FIGS. **5** and **5A** are interconnecting straps having a sheath disposed thereon;

FIG. **6** is a diagrammatic view of an exemplary apparatus for fabricating a sheath; and

FIG. **6A** is a portion of a folding frame used in the fabricating apparatus of FIG. **6**.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. **1** a single sheet of material **10**, is provided having a length L, a width W and a thickness T. It should be noted that the single sheet **10** may be die cut or otherwise provided from a larger sheet **16** (FIG. **1A**) of like material as will be described in conjunction with FIGS. **6** and **6A** below. The sheet **10** may be provided from a synthetic rubber such as neoprene or any other flexible, compressible and deformable material having like characteristics. Those of skill in the art will recognize of course that other materials such as woven fabrics, flexible plastics, foams, rubbers, or like materials may also be used as well as combinations and/or laminates of such materials. The selection of a particular material or materials may be made according to a variety of factors including but not limited to cost and ease of manufacture, compressibility, wearing comfort, absorption characteristics and strength.

Sheet **10** has four smooth edges **10***a*–**10***d*, however, sheet **10** may also be provided having patterned edges. For example, one or all of the edges **10***a*–**10***d* of the sheet **10** may be scalloped, V-shaped or provided in other shapes.

An emblem or a plurality of alpha-numeric characters **14** may optionally be provided on a first surface **12***a* of the sheet **10** using silk screening techniques. Other techniques such as embroidering may also be used to pro-

vide the characters **14** on the surface **12***a*. The particular technique used to provide the characters **14** on the sheet **10** may be selected according to a variety of factors including but not limited to the type of material from which the sheet **10** is made, the aesthetic appearance of the characters **14** on the sheet, the ease with which the characters **14** may be disposed on the sheet **10**, and cost.

Referring now to FIG. **2** in which like elements of the sheet **10** are provided having like designations, the sheet **10** is folded such that opposing edges **10***a*, **10***c* of the first surface **12***a* are placed in contact to provide a tube-like sheath **18**. Thus, the first surface **12***a* having the characters **14** provided thereon corresponds to an inner surface of the sheath **18** and a second surface **12***b* here corresponds to an outer surface of the sheath **18**.

The like edges **10***a*, **10***c* of the sheath **18** may then be fixed to each other using any technique well known to those of ordinary skill in the art. In the present embodiment, the like edges are stitched together as generally denoted at **20** to provide a seam **20***a*. Alternatively, the edges **10***a*, **10***c* may be glued or fixed to each other using fasteners such as staples, rivets, Velcro (TM) or any other fastener and/or suitable fastening technique with which such edges may be inexpensively and quickly fixed to each other. The particular technique used to fix the edges **10***a*, **10***c* of the sheath **18** together may be selected according to a variety of factors including but not limited to the characteristics of the material from which the sheath **18** is made, the final aesthetic appearance of the fastener, the aesthetic appearance of the sheath **18**, and the ease of manufacture and cost of the sheath **18**.

Referring now to FIGS. **3** and **3A**, an inverting device **21** includes a member **22** and a clamp **24** operatively coupled to the member **22**. To facilitate the inversion of the sheath **18**, the sheath **18** is disposed about the member **22**. The clamp **24** includes a pair of jaws **26** having a pair of holding edges **28** here the edges are provided having serrations therein. To invert the sheath **18**, the edges **28** of the clamp **24** engage a first end of the sheath **10***b* and hold the first end **10***b* of the sheath **18** against the member **22**. The second end **10***d* of the sheath **18** is then drawn over and past the clamp **24**. The jaws **26** of the clamp **24** are subsequently opened to release the first end **10***b* of the sheath **18** and the sheath **18** may be removed from the member **22**. Thus, the inner and outer surfaces of the sheath **18** are reversed by drawing one edge **10***d* of the sheath **18** over the edge **10***b* of the sheath.

Consequently, in those sheets **10** having the characters **14** provided on the surface **12***a* thereof, the characters **14** are now viewable on the exposed outer surface **12***a* of the sheath **18**. Furthermore, if the two edges **10***a*, **10***c* have been fixed by a stitching process, the joined edges **10***a*, **10***c* are now on the inner surface of the tubular sheath **18** and the finished seam **16***a* is viewable on the outer surface of the sheath **18**. Thus, after the inner and outer surfaces of the sheath **18** have been reversed to expose the surface **12***a* and the characters **14**, the tubular shaped sheath **18** may be disposed on interconnecting straps as will be described in conjunction with FIG. **5** below.

FIG. **3B** illustrates an alternate embodiment of an inverting device **21'** which includes a member **22'** having a hooked notch **23** therein. The member **22'** may be provided having any cross sectional shape and diameter selected such that the sheath **18** (FIG. **3**) may be disposed over the member **22'**. In operation, the member **22'** is disposed through the center of the tubular sheath **18** and the hooked notch **23** catches a first end of the sheath **10***b* (FIG. **3**) as the member **22'** passes through the center of the sheath **18**. The hooked notch catches and holds the end **10***b* of the sheath **18** and draws the end **10***b* past the second end **10***d* (FIG. **3**) of the sheath **18** to thus invert the sheath **18** Alternatively, the second end **10***d* may be drawn over and past the hooked notch **23** to thus invert the sheath **18**.

Referring now to FIGS. **4** and **4A** the sheath **18** has been inverted to expose the surface **12***a* and the characters disposed thereon. The tubular sheath **18** is shown to have a length L, a width W1, a thickness T, and a central opening therethrough. It should be noted that the sheath **18** is here provided having a substantially oval cross-sectional shape having a major axis length A1 and a minor axis length A2. However, the sheath **18** may of course be provided having substantially circular, square or any other cross-sectional shape which may be selected in accordance with the size and shape of the interconnecting strap over which the sheath **18** may be disposed and of course based upon the flexibility and nature of the selected sheath material.

Furthermore, in addition to the steps for forming the sheath **18** described above in conjunction with FIGS. **1–3A**, the sheath **18** may also be formed in a predetermine tubular shape using injection molding techniques, extrusion techniques or any other manufacturing techniques suitable for providing the sheath **18**.

Referring now to FIGS. **5** and **5A**, the tubular shaped sheath **18** is disposed over a pair of interconnecting straps **30***a*, **30***b* generally denoted **30**. Here the straps **30** are shown attached to a hat such as a baseball cap **32** having a normally frontal portion (not shown), a posterior portion **32***a*, a top (not shown) and a bottom portion **32***b*. The posterior portion of the cap **32***a* has a generally inverted U shaped opening **33** extending toward the bottom of the cap **32***b*. The interconnecting strap **30***a* is attached to the cap **32** adjacent to the opening **33** at the cap bottom **32***b* and extends generally across the opening **33**. The strap has a first engagement region **31** here provided as a plurality of holes **31***a*–**31***e* through the strap **31***a*. The strap **30***b* acts as an engagement member which is attached to the cap **32** adjacent the opening **33** at the bottom of the cap **32***b*. The strap **30***b* has an engagement region **35** here provided as a plurality of raised discs **35***a*–**35***d* which securely fit into the holes **31** and are thus cooperative with the engagement region **31**. It should be noted that either of the straps **30***a*, **30***b* may be omitted and an engagement member such as a clip or other engagement member (not shown) may be attached to the cap for disengageably coupling the interconnecting strap.

To apply the sheath **18** and thus provide a protective cover over at least one interconnecting straps, the sheath **18** is disposed over a first one, here strap **30***a*, of the interconnecting straps **30***a*, **30***b*. The sheath **18** is deformed to expose the engagement region **31** and the engagement region **31** of the first interconnecting strap **30***a* is engaged to the engagement region **35** the second strap **30***b*. The sheath **18** may then be adjusted about at least a portion of the engagement regions **31**, **35** to cover the portion of the engagement regions and to display the indicia in a desired manner.

It should be noted that a suitably sized sheath **18** may also be disposed over interconnecting straps on any type of apparel. For example, the sheath **18** may be disposed over interconnecting straps of a wristwatch, a

hospital patient identification wrist strap, a belt or any other item having interconnecting straps connected thereto. Furthermore, if the two edges of the sheath are connected by Velcro (TM), the sheath **18** may be disposed over a continuous strap.

It will be appreciated by those of ordinary skill in the art that the sheath **18** may be provided from a material which may be stretched to provide a sheath **18** which may be adapted to fit over straps having a variety of dimensions. Furthermore, the material from which the sheath **18** is fabricated may be selected such that the sheath **18** may protect a wearer (not shown) from abrasive straps and thus provide the wearer with a more comfortable fit. For example, in the case where the sheath **18** is disposed over the interconnecting strap **30** of the baseball cap **32**, the sheath **18** may protect the wearer's forehead from the abrasive straps **30** when the baseball cap is worn backwards as is commonly done by catchers in the game of baseball as well as others. Moreover the material from which the sheath is fabricated may be selected having a predetermined absorption characteristic of such that the sheath **18** is able to absorb perspiration on the head of a user for example.

Referring now to FIGS. **6** and **6A**, an exemplary apparatus **33** for providing a plurality of sheaths **18** (FIG. **4**) from a rolled sheet **34** includes a folding frame **36** having a groove **38** therethrough and a slot **40** between a first surface **36***a* of the frame **36** and the groove **38**. The rolled sheet **34** may be provided for example by cutting the sheet **16** (FIG. **1A**) along lines **17** to provide strips of material (not shown).

The rolled sheet **34** is fed into the groove **38** and the folding frame **36** folds the portions **10'** of the sheet **24** fed thereto such that the edges **10***a*, and **10***c*, are paced in contact with each other along the surface **12***a*, The pair of edges **10***a'*, **10***c'* of the sheet **10'** are exposed through the slot **40** in the folding frame **36**. A pair of rollers **42** draw the rolled sheet **34** into the folding frame **36** and through a stitching apparatus **44** which, in a predetermined region of the sheet, stitches the exposed edges **10***a'*, **10***c'* of the folded sheet **10'** together.

The folded sheet **10'** with the edges **10***a'*, **10***c'* fixed together are then fed to a cutting apparatus **46** which cuts the sheet **10'** at predetermined lengths to provide a plurality of sheaths **18** (FIG. **2**) which may be then inverted as described above in conjunction with FIGS. **3** and **3A**. As mentioned above, the cutting apparatus **46** may provide the sheaths **18** (FIG. **2**) having patterned edges.

Having described preferred embodiments of the invention, it will be apparent to those of ordinary skill in the art that other embodiments incorporating their concepts may be used. It is felt, therefore, that these embodiments should not be limited to disclosed embodiments but rather should be limited only by the spirit and scope of the appended claims.

What is claimed is:

1. A piece of headwear consisting of:

a cap having a normally frontal portion and a posterior portion, a top and a bottom and wherein said posterior portion is provided having a generally inverted U shaped opening extending toward said bottom of said cap;

a first interconnecting strap attached to said cap adjacent to the said opening at the bottom of said cap and extending generally across said opening, said first interconnecting strap having a first engagement region;

an engagement member having an engagement region, said engagement member attached to said cap adjacent the opening at the bottom of said cap and opposite said first interconnecting strap, said first interconnecting strap coupled to said engagement member at the engagement region of said engagement member;

a generally tubular seamless sheath of compressive, deformable material having a predetermined length extending from a first end to a second end and having an inner sheath surface and an outer sheath surface, said inner sheath surface defining a cavity having dimensions selected to permit said sheath to be disposed over at least a portion of the first engagement region of said first interconnecting strap wherein said sheath is disposed over at least a portion of said first interconnecting strap;

wherein said compressive, deformable material is neoprene;

wherein said inner sheath surface is continuous; and

wherein said sheath outer surface includes predetermined indicia thereon.

2. The piece of headwear as recited in claim **1** wherein said engagement member comprises a second interconnecting strap attached to said cap adjacent to said opening at the bottom of said cap and opposite said first interconnecting strap and extending generally across said opening, said second interconnecting strap having a second engagement region cooperative with the first engagement region of said first interconnecting strap.

3. A piece of headwear consisting of:

a cap having a normally frontal portion and a posterior portion, a top and a bottom wherein said posterior portion is provided having a generally inverted U shaped opening extending toward the bottom of said cap;

a first interconnecting strap attached to said cap adjacent to the opening at the bottom of said cap and extending generally across the opening, said first interconnecting strap having a first engagement region;

an engagement member having an engagement region, said engagement member attached to said cap adjacent the opening at the bottom of said cap and opposite said first interconnecting strap, said first interconnecting strap coupled to said engagement member at the engagement region of said engagement member; and

a generally tubular sheath of compressive, deformable material having a predetermined length extending from a first end to a second end and having an inner sheath surface and an outer sheath surface, said inner sheath surface defining a cavity extending from the first end of the sheath to the second end of the sheath and having cavity dimensions selected to permit said sheath to be disposed over at least a portion of the first engagement region of said first interconnecting strap wherein said sheath is disposed over at least a portion of said first interconnecting strap and wherein said sheath is provided having a continuous seat along at least a portion thereof and wherein said continuous seam extends substantially along the entire length of said sheath and wherein said inner sheath surface is continuous and wherein said continuous seam is provided from a fastening tape comprising a pair of opposing pieces of fabric, a first one of said pair of

pieces of fabric having an arrangement of hooks thereon and a second one of said opposing pair of pieces having a pile and wherein said hooks and pile interlock when pressed together.

4. The piece of headwear as recited in claim 3 wherein said engagement member comprises a second interconnecting strap attached to said cap adjacent to said opening at the bottom of said cap and opposite said first interconnecting strap and extending generally across said opening, said second interconnecting strap having a second engagement region cooperative with the first engagement region of said first interconnecting strap.

5. A piece of headwear consisting of:

a cap having a normally frontal portion and a posterior portion, a top and a bottom, wherein the posterior portion is provided having a generally inverted U shaped opening extending toward the bottom of said cap;

a first interconnecting strap attached to said cap adjacent to the opening at the bottom of the opening and extending generally across the opening, said strap having a first engagement region;

a second interconnecting strap attached to said cap adjacent to said opening at the bottom of said cap and opposite said first interconnecting strap and extending generally across said opening, said second interconnecting strap having a second engagement region cooperative with the first engagement region of said first interconnecting strap;

a generally tubular sheath of compressive, deformable material having a predetermined length extending from a first end to a second end and having an inner sheath surface and an outer sheath surface, said inner sheath surface defining a cavity extending from the first end of said sheath to the second end of said sheath and having cavity dimensions selected to permit said sheath to be disposed over at least a portion of the first and second engagement regions of said first and second interconnecting straps wherein said sheath is disposed over at least a portion of each of said first and second interconnecting straps and wherein said sheath is provided having a substantially continuous sewn seam;

wherein said continuous sewn seam extends substantially along the entire length of said sheath;

wherein said outer sheath surface is provided having predetermined indicia thereon;

wherein said inner sheath surface is continuous; and

wherein said compressive, deformable material is neoprene.

6. A piece of headwear consisting of:

a cap having a normally frontal portion and a posterior portion, a top and bottom, wherein the posterior portion is provided having a generally inverted U shaped opening extending toward the bottom of said cap;

a first interconnecting strap attached to said cap adjacent to the opening at the bottom of said cap and extending generally across the opening, said first interconnecting strap having a first engagement region;

an engagement member having an engagement region, said engagement member attached to said cap adjacent the opening at the bottom of said cap and opposite said first interconnecting strap, said first interconnecting strap coupled to said engagement member at the engagement region of said engagement member; and

a generally tubular sheath of compressive, deformable material having a predetermined length extending from a first end to a second end and having an inner sheath surface and an outer sheath surface, said inner sheath surface defining a cavity extending from the first end of said sheath to the second end of said sheath and having cavity dimensions selected to permit said sheath to be disposed over at least a portion of said first interconnecting strap and wherein said sheath is provided having a substantially continuous glued seam along at least a portion thereof;

wherein said continuous seam extends substantially along the length of said sheath;

wherein said inner sheath surface is continuous;

wherein said compressive, deformable material is neoprene; and

wherein said outer sheath surface is provided having predetermined indicia thereon.

7. The piece of headwear as recited in claim 6 wherein:

said engagement member comprises a second interconnecting strap attached to said cap adjacent to said opening at the bottom of said cap and opposite said first interconnecting strap and extending generally across said opening, said second interconnecting strap having a second engagement region cooperative with the first engagement region of said first interconnecting strap; and

said sheath is disposed over at least a portion of the first and second engagement regions.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 5,315,714

DATED : May 31, 1994

INVENTOR(S) : Alexander C. Peters, et al.

It is certified that error appears in the above-indentified patent and that said Letters Patent is hereby corrected as shown below:

Column 5, line 34, "10a, and 10c," should read --10a', and 10c'--.

Column 5, line 35, "surface 12a," should read --surface 12a'.--.

Signed and Sealed this

Twenty-seventh Day of December, 1994

Attest:

BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks